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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FLANIGAN, ALLEN J

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

05/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,374	Applicant(s) DOMEN, JEAN-PAUL	
	Examiner Allen J. Flanigan	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-6, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 4-6, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The claims as amended employ terminology that is not found in the specification, such as “transverse feed manifold” and “elongated hollow central portions” in claim 4. Further, the specification is objected to because of inconsistency and lack of clarity in the numbering and description of the features shown in the drawings. For example, the reference number 22 is used to refer to both hollow plates and longitudinal fins; reference numbers 24 and 26 are used to refer, variously, to end connectors, hollow connectors, and connecting pipes; reference numeral 28 is used to refer to a connection branch and a transverse connection. Applicant must use consistent terminology and numbering in the specification so that the features being described will be clearly understood.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Newly presented claim 12 is fundamentally ambiguous in that it is not clear what the recitation of a "plurality of stacked pairs of hollow plates . . . each hollow plate of a pair extending in opposition to the other hollow plate of the pair from the internal common channel" is referring to. There is no support for this described feature in the originally filed disclosure, either in the specification or drawings; thus it is unclear what structure the above recitation is supposed to convey. Nothing in the disclosed invention shown in the drawings as originally filed appears to correspond to hollow plates extending in opposed fashion from a common channel. The hollow passages formed by the corrugations of the bellows are all shown as being essentially coextensive with adjacent passages.

Claims 4-6 and 12 are rejected under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim what the applicant regards as his invention.

There is no antecedent basis for "channel common to all plates" in line 17 of claim 4. Also, the relationship between the several recited elements of claim 4 is not clear: the relationship between the "hollow plates", the "elementary conduits", the "hollow end connectors", and the "transverse feed manifolds". Further, the recitation "hollow plate" would seem to refer to one of the elements labeled 22 or 23 in Fig. 1, i.e. it would seem to imply a hollow

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structure bounded by two facing sheets of material in the molded article that are closely spaced and resemble a plate, but hollow; however, the subsequent recitation in claim 4 that a pair of hollow plates constitute an elementary conduit of the active part implies that the so-called hollow plates must be paired to form the basic passages of the heat exchanger. Claim must be amended to clearly and understandably point out what structure the claims are meant to cover.

Newly presented claim 12 is fundamentally ambiguous in that it is not clear what the recitation of a "plurality of stacked pairs of hollow plates . . . each hollow plate of a pair extending in opposition to the other hollow plate of the pair from the internal common channel" is referring to. There is no support for this described feature in the originally filed disclosure, either in the specification or drawings; thus it is unclear what structure the above recitation is supposed to convey. Nothing in the disclosed invention shown in the drawings as originally filed appears to correspond to hollow plates extending in opposed fashion from a common channel. The hollow passages formed by the corrugations of the bell

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller.

Miller is readable on, and thus anticipates the above claims (except for the problematic language of claim 12 rejected on the previous page). These claims are broadly drafted and fail to even recite inlets and outlets for first and second fluids, or spaced manifold channels. Thus, the lack of such features in Miller is of no moment, for the reference clearly shows a bellows type molded plastic element 10 surrounded by a housing 20, 20' that each define a confined space or passage through which a fluid could potentially flow.

As best as can be understood from claim 4 in its current form, it would be rejected as follows:

Claim 4 is rejected under 35 U.S.C. 103(a) as obvious over Gremel in view of Oscarsson and Kunz.

Gremel shows a heat exchanger with a metal bellows heat exchange element that has two tubular manifold spaces (see Figs. 5a, 5b) to deliver fluid to and remove it from the space between the folds of the bellows. A housing surrounds the bellows to form the flow space for a second fluid. Regarding that the recitation that the "stack of hollow plates [is] formed by compression of an accordion-shaped polymer preform produced by thermo-blowing", it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to form the bellows of Gremel of plastic, since Oscarsson teach that the use of biocompatible plastics for heat exchangers for blood instead of metals such as stainless steel can reduce blood trauma. The recitation "thermo-blowing" is a product by process limitation; there would

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appear to be no structural distinction between a plastic bellows formed by “thermo blowing” and one formed by any other conventional process of plastic forming. Moreover, it is known in the art to form plastic bellows elements by blow molding as shown by Kunz, and even if a structural distinction resulted from the particular process recited, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ such a conventional fabrication process to make the bellows of Gremel out of plastic.

Applicant's arguments with respect to the claims rejected above have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

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no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (571) 272-4910. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allen J. Flanigan/
Primary Examiner, Art Unit 3744